

REMARKS

Favorable reconsideration and allowance of the application are requested in view of the foregoing claim amendments and the following remarks.

Claims 69, 72-74, and 76-81 are pending in the application, with claims 69 and 78 being the independent claims. By this amendment, claim 75 has been canceled, claims 69, 73, and 74 have been amended, and claims 78-81 are newly presented. Support for the amendments to the specification and to the claims, as well as for the new claim, can be found in the application, as filed. No new matter has been added.

Initially, Applicants' representative would like to thank Examiner Aftergut for the cordial and productive personal interview conducted on March 3, 2005. At the interview, the outstanding rejections under 35 U.S.C. §§ 112 and 103 were discussed. The foregoing amendments are being made in view of the personal interview, and such are earnestly believed to place the application in condition for allowance.

Section 112 rejections

In the outstanding Office Action, claims 73 and 75 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description and enablement requirements. Applicants traverse these rejections.

Claim 73

As an aid for discussion of claim 73, attached is Appendix A, containing two diagrams (A and B).

Initially, Applicants submit that support for claim 73 may be found at least in the tenth embodiment, discussed in the specification beginning at page 48, line 14, and

illustrated in Figure 27. While Figure 27 shows an embodiment in which leading and trailing ends of a wound film are overlapped, Applicants submit that non-overlapping edges are contemplated at least at page 57, lines 10-14. Moreover, winding with multiple turns is discussed, for example, at page 65, lines 23-26.

From the interview, Applicants' representative understands the Examiner's position to be that the application, and specifically Figure 27, teaches winding a film about a columnar member as illustrated in attached Diagram A. It is also understood that the Examiner is of the opinion that claim 73 reads on Diagram B, and specifically a situation in which L_2 in that Figure equals N times the circumference of the columnar member, where N is an integer greater than 1. Thus, according to the Examiner, because Diagram A and Diagram B are distinct, claim 73 is not supported by the specification and/or enabled. Applicants disagree.

More specifically, the Examiner is understood to be taking the position that the end of the film referenced by numeral 1 in Diagram A is the leading end of the film, and the end of the film referenced by numeral 4 is the trailing end. Thus, when the film of Diagram A is wound on the columnar member, the leading and trailing ends are at the respective top and bottom of the columnar member, and a resulting tube is formed of a single, spirally-wound film. With this interpretation, the leading and trailing ends are not positioned approximately on a line normal to an outer surface of the columnar member without overlapping, as required by claim 73.

Applicants submit, however, that the Examiner's designation of the leading and trailing ends is incorrect. In particular, Applicants submit that the end referenced by numeral 2 in Diagram A is the leading end, and the end referenced by numeral 3 in

Diagram A is the trailing end (or vice versa). Thus, by making the dimension L_1 equal to the circumference of the columnar member, the film may be once wrapped around the columnar member with the leading end 2 abutting the trailing end 3, with both ends 2, 3 being spirally-formed about the columnar member. Similarly, if one were to make the dimension L_1 equal to N times the circumference of the columnar member, where N is an integer greater than 1, the film may be wrapped around the columnar member N times, with the leading end 2 and the trailing end 3 still aligning, as recited in claim 73.

Additionally, Applicants submit that if the circumference of the columnar member depicted in Diagram A is the same as the circumference of the columnar member depicted in Diagram B, and if $L_1 = L_2 =$ the circumference of those columnar members, the only difference between what is depicted in Diagram A and Diagram B is the oblique angles forming the parallelogram-shaped film. Thus, Applicants understand the examples depicted in Diagrams A and B to be the same. And, since claim 73 reads on Diagram B, it also must read on Diagram A.

For at least the foregoing reasons, Applicants submit that claim 73 is described in, and enabled by, the specification of the present application. Accordingly, favorable reconsideration and withdrawal of the rejections of claim 73 under Section 112 are requested.

Claim 75

At the interview, the Examiner indicated that the Section 112 rejections of claim 75 stem from alleged ambiguities caused by that claim's dependency on claims 69 and 72. Accordingly, as discussed at the interview, claim 75 has been canceled herein, and a new claim 78, with features similar to those of claim 75, has been added. Accordingly,

Applicants submit that the section 112 rejections of claim 75 are now moot. Applicants further submit that new claim 78 is allowable. Favorable consideration is requested.

Section 103 rejection

Regarding art rejections, claims 69, 72, 74, 76, and 77 are rejected under 35 U.S.C. § 103 as being unpatentable over Japanese Patent No. 7-205274 (JP '274) in view of Japanese Patent No. 55-57429 (JP '429), and either one of Japanese Patent No. 5-131555 (JP '555) or European Patent No. 415207 (EP '207). These rejections are traversed.

As now recited in independent claim 69, in one aspect of the invention, a method for making a tubular film includes, in sequence, a winding step, a fitting step, and a heating step. In the winding step, a thermoplastic sheet film is wound on a columnar member with at least two turns so that leading and trailing ends of the wound film are positioned approximately on a line normal to an outer surface of the columnar member without overlapping each other. In the fitting step, a tubular molding member is fit over the columnar member with the wound film, wherein a difference between an outer diameter of the columnar member and an inner diameter of the tubular molding member results in a gap between the columnar member and the tubular molding member when the tubular molding member is fitted over the columnar member, and wherein a thermal coefficient of expansion of the columnar member is larger than a thermal coefficient of expansion of the tubular molding member. In the heating step, the columnar member with the wound film and the tubular molding member is heated to a temperature at which the wound film is softened and the gap is narrowed to weld the leading and trailing ends of the wound film and to form the at least two turns of the thermoplastic sheet film into the tubular film having a uniform thickness.

In another aspect of Applicants' invention, new independent claim 78 recites a method of making a tubular film including, in sequence, a providing step, a winding step, a fitting step, and a heating step. In the providing step, a thermoplastic sheet film having leading and trailing ends is provided. An edge of the leading end forms an angle with a first film surface other than 90 degrees and an edge of the trailing end forms an angle with a second film surface equal to the angle between the edge of the leading end the first film surface. In the winding step, the thermoplastic sheet film is wound on a columnar member with at least two turns so that the edge of the leading end and the edge of the trailing end of the wound film are generally aligned with respect to a line normal to an outer surface of the columnar member, such that a thickness of the wound film is substantially uniform around the columnar member. The fitting and heating steps are the same as those in claim 69.

Applicants submit that these features are not taught or suggested by the cited patents, whether those patents are taken alone or in correct combination.

JP '274 relates to a method for producing a tubular film. According to the method, a film 1 is wound plural times around a film holding jig 2 such that the edges of the film 1 at the starting point and at the end point are disposed at the same position with respect to the circumference of the jig 2. Heat (and in some instances pressure) is then applied locally by a fusion head 4 to the portion of the film at which the starting point and the end point are located to fuse the film at that position.

As also discussed, JP '274 also mentions an embodiment in which a film, after having undergone localized heating and pressing, "was subjected to post-heating at 350° C for 15 minutes to fuse the film over the entire circumference." Translation of '274 patent, page 9.

JP '429 relates to a method for producing molded cylindrical polytetrafluoroethylene resin. According to that patent, a central core (mandrel) 2 is inserted into a cylindrical mold 1 and a PTFE sheet A' is rounded and placed in a space 4 between the central core 2 and the cylindrical mold 1. Top and bottom holding molds 3 are then secured to the ends of the cylindrical mold 1. In the opening 4, the edges of the sheet are abutted to one another, or are placed in close proximity to each other. When the mold is heated, the PTFE sheet A' expands in the space of the mold to completely fill the space while the facing portions at both edges are bonded with melting by the expansion pressure of the sheet, thus forming a cylindrical sheet.

JP '429 also seems to contemplate use of two plies within the opening 4, with the two plies, and the abutting edges of each ply, fusing when heated.

JP '555 and EP '207 are understood to be cited for teaching a columnar member having a greater thermal coefficient of expansion than a tubular mold.

For the reasons set forth in prior responses, Applicants again submit that JP '274 and JP '429 provide no motivation to combine these patents as suggested by the Examiner. Moreover, newly cited JP '555 and EP '207, as discussed at the interview, also do not provide such motivation.

Nevertheless, to further amplify the distinction between independent claims 69 and 75 and the cited patents, claim 69 has been amended herein along the lines discussed at the interview (and claim 75, as presented, contains similar features). Specifically, those claims recite that the claimed steps are performed sequentially, and that in the heating step the gap (between the columnar member and the tubular molding member) is narrowed to weld the leading and trailing ends of the wound film and to form the at least two turns of the

thermoplastic sheet film into the tubular film having a uniform thickness. Thus, a single step is used to weld the leading and trailing ends of the wound film and to form the at least two turns of the thermoplastic sheet film into the tubular film.

Applicants submit that even if the cited patents could be combined, modifying the two step process of JP '274 to be a single step, similar to that of JP '429, would be to totally disregard the invention (i.e., localized pressure and heating) of JP '274.

For the foregoing reasons, Applicants submit that the present invention, as recited in independent claims 69 and 78, is patentably defined over the cited art, whether that art is taken individually or in combination.

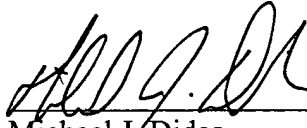
Dependent claims 72-74, 76, 77, and 79-81 should also be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claims 69 and 78. Individual and favorable reconsideration of these dependent claims is requested.

This Amendment was not presented earlier in the prosecution, inasmuch as it was earnestly believed that the claims heretofore on file were in condition for allowance. It is believed that the Examiner's familiarity with the present application will allow full consideration hereof without the expenditure of undue time and effort.

Applicants further submit that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael J. Didas", is written over a horizontal line.

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